

**IN THE ABSTRACT:**

The Abstract as amended below with a replacement Abstract shows added text with underlining and deleted text with ~~striketrough~~.

Please DELETE the Abstract in its entirety and substitute the attached new Abstract.

## ABSTRACT OF THE DISCLOSURE

In the non-node, the apparatus neither obtains a self physical\_ID nor transmits a self\_ID packet. Therefore, the apparatus is not recognized as a node in a self-identification phase. However, the apparatus transmits an indent\_done signal received from a child node directly to a parent node. Moreover, when the apparatus becomes a route node in a tree identification phase in the non-node mode, after normal configuration, a PHY configuration packet output section outputs a PHY configuration packet for resetting an apparatus of another node as a route node. In a normal mode, the apparatus obtains a self physical\_ID and transmits a self\_ID packet. Therefore, the apparatus is recognized as a node in the self-identification phase.